

DATA EVALUATION RECORD

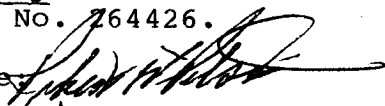
Draft # 15

1. Chemical: Neurolidol SN: 128911
2. Test Material: The test material used for this test was 97% ai.

3. Study/Action Type: Freshwater fish toxicity test.

4. Study ID: Surprenant, D.C., Acute Toxicity of Neurolidol to Rainbow Trout (Salmo gairdneri) (1984) Springborn Bionomics, Inc. Report No. BW-86-04-1974. Study No. 11,373.0286.6101.103. Study Sponsor: Fermone Chemicals, Inc. Study Location: Wareham, MA EPA Accession No. 764426.

5. Reviewed by: Robert W. Pilsucki  
Microbiologist  
EEB/HED

Signature:   
Date: 1/8/87

6. Approved by: Raymond W. Matheny  
Head, Section 1  
EEB/HED

Signature:   
Date: 1/8/87

7. Conclusions:

This study is considered core. The LC<sub>50</sub> of farnesol for rainbow trout is 1.8 (95% CL = 1.4 and 2.2) ppm.

8. Recommendations: N/A.

9. Background: N/A.

10. Discussion of Individual Studies or Tests: N/A.





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11. Materials and Methods:

Species: Rainbow trout (*Salmo gairdneri*)

Size: Mean length: 27 + 6 mm  
Mean weight: 0.27 gm

Source: Somewhere in California

Acclimation period:

The trout were held in a 500 L fiberglass tank for 14 days. The photoperiod was 16 hr light/8 hr dark. There were 7.2 to 10.1 tank volume replacements per day. They were fed dry, pelleted commercial food until 48 hours prior to testing. There were no mortalities during the acclimation period.

Vehicle:

The test material was dissolved in acetone.

Test vessel:

Size, volume construction: The test was carried out in 19.6 L glass jars containing 15 L of test solution. The solution depth was 27.5 cm with a surface area of 545 cm<sup>2</sup>.

Loading: The biological loading was 0.18 grams per liter.

Test water:

Source and chemical characteristics: The water used in this test reconstituted from deionized and had the following chemical characteristics: hardness (as CaCO<sub>3</sub>); 46 mg/L; alkalinity (as CaCO<sub>3</sub>), 31 mg/L; pH, 7.5; conductivity 160 nmho/cm.

Aeration: None

Temperature: 13 °C

Number of fish/concentration: 10.

Controls:

Both a negative, nondosed and a solvent control were performed concurrently with the treatment groups.

Statistical Analysis

The computerized statistics of Stephan was used to analyze the results.

12. Reported Results:

Mortality Data Rainbow Trout

Concentration (ppm)	Number Exposed	Number Dead	Percent Mortality
0 (negative)	10	0	0
0 (solvent)	10	0	0
1.4	10	0	0
2.2	10	10	100
3.6	10	10	100
6.0	10	10	100
10.0	10	10	100

pH and D.O. Values During Test

Concentration	Ph			D. O (% Saturation)		
	0 hr	48 hr	96 hr	0 hr	48 hr	96 hr
1.4	7.3	7.1	7.0	92	67	47
3.6	7.3	*	*	92	*	*
10	7.3	*	*	93	*	*

\*Measurement not made because of total mortality.

The author reported that the 96-hour LC<sub>50</sub> of farnesol for rainbow trout was 1.8 (1.4 - 2.2) mg/L. The observed-no-effect level was 1.4 mg/L.

13. Study Author's Conclusions/Quality Assurance Measures:

The author concluded that farnesol was moderately toxic.

The data in this report were audited by the QAU on April 16, 1986.

14. Reviewer's Discussion and Interpretation of the Study:

- a. Test Procedure: This test procedure follows that outlined in EPA's Pesticide Assessment Guidelines: Subdivision E.

- b. Statistical Analysis: EEB verification of the statistical analysis, using Stephan's computer program, yielded results identical to those of the authors.
- c. Discussion/Results: It appears that the LC<sub>50</sub> of farnesol for rainbow trout is 1.8 ppm, and is moderately toxic to rainbow trout.
- d. Adequacy of the Study:
  - 1. Category: Core.
  - 2. Rationale: This study follows the procedures outlined in EPA's Pesticide Assessment Guidelines: Subdivision E.
  - 3. Repairability: N/A.

PILSUCKI NEUROLIDOL RAINBOW TROUT 12-5-86

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
10	10	10	100	9.765625E-02
6	10	10	100	9.765625E-02
3.6	10	10	100	9.765625E-02
2.2	10	10	100	9.765625E-02
1.4	10	0	0	9.765625E-02

THE BINOMIAL TEST SHOWS THAT 1.4 AND 2.2 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 1.754993

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISTICALLY SOUND RESULTS.

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